

# Meeman-Shelby Forest State Park Strategic Management Plan

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**2023 – 2033**

DRAFT

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## Park Purpose, History and Description

Meeman-Shelby Forest State Park is a 12,539-acre state park located 15 minutes North of downtown Memphis, provides an escape from the hustle and bustle of the big city. Offering overnight accommodations, pavilion rentals, boating, fishing, 36-hole disc golf course, an 8-mile horse trail and approximately 20 miles of hiking trails and other interpretive and recreational opportunities for all ages.

The area was settled during the 1800's largely by farmers and people desiring to invest in land. Sold in 5,000-acre plots, the land was divided and resold.

In 1933, Edward J. Meeman, editor of the Memphis Press Scimitar, initiated the idea of a park near Memphis after visiting the Black Forest in Germany during his trip to interview Adolf Hitler. The National Park Service heard of this and considered it a worthy investment. After the National Park Service declared the land suitable for development of a recreational demonstration area, the United State Department of Agriculture declared the lands submarginal and began acquiring these lands under the Resettlement Administration. Under the direction of the National Park Service with WPA labor development began in 1935.

In 1940, the park was deeded to the Tennessee Department of Conservation with the stipulation that the land must be used for state park purposes. Due to budget and management constraints the state did not become actively involved in the park until 1944. The Division of Parks and Recreation administers the entire 12,539 acres. In 1944 The Division of Parks and Recreation entered into a cooperative agreement with the state Game and Fish Commission (TWRA) for wildlife management.

The park is significant for its protection of the diminishing southern bottomland hardwood forest. This type of ecosystem is comprised of perennial swamps, sloughs, and low gradient streams. Due to this protection the majority of all Eastern Wild Turkeys in Tennessee have been grandfathered from birds living within the park.

Living in the shadows of a metropolitan area along with the wild turkey are river otters, bobcats, a passing through mountain lion, coyotes, red and gray fox, gray and fox squirrels, white tailed deer, an abundance of vertebrates and invertebrates.

The Audubon Society designated Meeman-Shelby Forest State Park (a portion of the park is state natural area) an Important Bird Area in 2006. The area was designated because it resides within an internationally significant flyway for migratory birds. Over 200 species of birds, including rare breeding and migratory species, have been recorded for the park. For these reasons, the park is a significant destination for birders. An Audubon Society Christmas Bird Count is held annually in the park. Along with the wildlife there are several champion trees and other endangered and threatened species.

## Goals, Objectives and Action Plans

### THE RESOURCES: Exemplary Natural and Cultural Stewardship

**Goal:** Tennessee State Parks will be nationally recognized for exemplary stewardship of natural and cultural resources.

**Objective - *More and better stewards:*** Increase internal and external stewards who share Tennessee State Parks core values and can contribute to the State Parks mission to Tennessee's natural and cultural resources.

#### Action Plan

- a. To use social media to raise awareness of the unique natural resources our park contains.
- b. Raise awareness of how our visitors can assist us in the management of our natural resources. Through volunteer groups, TN Promise and other forms of engagement.
- c. Utilize interpretive programming to educate visitors about the park, its resources, conservation, and what they can do to help.

**Objective - *Better resource management practices:*** Identify, manage, and restore unique natural and cultural resources for generations to come.

#### Action Plan:

- a. Continue to identify and inventory endangered and threatened species in our park.
- b. Collaborate with The Department of Natural areas to access threats to these species and provide guidance on how they need to be protected.
- c. Continue collaborating with Urban forestry and U.T. Knoxville Department of Forestry to continue documenting State and National Champion trees.
- d. Continue working with TWRA on the management and care of park properties being managed by TWRA.
- e. Train all staff to assist in resource management. Have appropriate resource management objectives in job plans.
- f. Update resource management plan annually and ensure an updated continuous list of resource management objectives is maintained.

**Objective: *Better data and technology:*** Leverage data and technology to help inform and guide decisions on natural and cultural resources stewardship.

#### Action Plan:

- a. Using software that is compatible with the Department of natural areas databases, making sure they have the most up to date data points by updating historical data with more accurate information.
- b. Utilize GIS technology to map cultural and natural resources throughout the park. Ensure that the data integrity is maintained and accessible as an ongoing database.

### THE VISITOR: Welcoming and Inviting to All

**Goal:** Tennessee State Parks will be the most accessible, welcoming, and inviting system of parks that enriches Tennesseans and visitors through excellent interpretation, education, and resource-based recreation.

**Objective:** *accessible, welcoming, and inviting to all:* create quality and varied programs of interpretation, recreation, and outreach so that all audiences feel welcome and invited.

Action Plan:

- a. Ensure guests understand the physical demands necessary to participate in activities and programs.
- b. Provide a variety of programs ranging from introductory skills to advanced skills.
- c. Staff will research and develop interpretive programs on a variety of natural and cultural themes that capture full stories to provide unbiased information to park visitors.

**Objective:** *high quality programming:* develop and support mission-based and resource-relevant programs to engage visitors, empower staff, and develop community wellbeing.

Action Plan:

- a. Continue to utilize the interpretive library to incorporate the best ideas from throughout the department into our programming efforts.
- b. Programs will educate visitors and provide them with a sense of place within the park. They will help visitors to better understand the history, natural, and cultural resources of the park.
- c. All customer facing staff will receive CIG certification and will gain the knowledge to educate the visitor about the significant features of the park.

**Objective:** *resource-based outdoor recreation:* provide resource-based outdoor recreation opportunities that ensure representation of Tennessee's natural, scenic, and cultural resources.

Action Plan:

- a. Through providing recreational activities such as canoe tours and guided hikes, we can highlight the unique natural resources in our park.
- b. Resource based recreation opportunities will be highlighted in park kiosks, the visitor's center, and social media.
- c. Improving lake access and trail conditions will be a focus for park staff.

## THE AMENITIES: Well-Maintained Facilities and Amenities

**Goal:** Tennessee State Parks will be well maintained with facilities and amenities that delight visitors and make Tennesseans proud.

**Objective:** *Improve maintenance:* Improve overall maintenance and upkeep of all park facilities and amenities that contribute to meaningful visitor experiences.

Action Plan:

- a. Use HIPPO CMMS as our maintenance reporting system to schedule preventative maintenance and track deferred maintenance needs for utilities and infrastructure.
- b. Will utilize a standardized landscaping schedule and litter patrol to maintain clean and professionally maintained state park grounds.

**Objective:** *Better park accessibility:* ensure all visitors have opportunities for meaningful experiences in every Tennessee State Park.

Action Plan:

- a. Work to improve ADA accessibility all park facilities and work to make resource access ADA accessible where possible.
- b. Obtain an all-terrain wheelchair for the park.
- c. Interpret and exhibit park resources in the nature center. Add interactive multimedia and multisensory experiences so that everyone has the ability to encounter the natural and cultural features of the park.
- d. Complete a park signage replacement project to improve wayfinding signage and add interpretive panels at key locations.

**Objective:** *Quality and welcoming facilities and amenities:* provide high-quality and well-planned facilities and amenities that enrich the visitor experience.

Action Plan:

- a. Maintain clean and inviting facilities for park visitors and guests.
- b. Ensure facility renovations and new construction adhere to departmental style guidelines.
- c. Schedule regular facility inspections to ensure cleanliness and identify maintenance issues that need addressing.

## THE OPERATIONS: Operational Excellence

**Goal:** Tennessee State Parks will be a national model for operational excellence in a state park system.

**Objective:** *Support and empower our people:* support and empower our workforce by creating a caring environment that encourages professional growth and great customer service.

Action Plan:

- a. Continue training of staff in HVAC, electrical and other maintenance tasks.
- b. Provide opportunities for all employees to contribute to park goals such as better resource management and interpretation.
- c. Ensure all employees have a chance to succeed and be awarded for success through promotion and salary increases.
- d. Hold regular staff meetings to engage in conversations with employees to ensure their ideas and concerns are heard.
- e. Make both internal and external customer service a priority for all employees.

**Objective:** *Efficient and effective operations:* provide efficient, effective, and fiscally responsible service to Tennesseans and our visitors.

Action Plan:

- a. Continue to hire and train maintenance staff in HVAC, electrical, plumbing. This has currently saved us around \$60,000 per fiscal year since we do not have to use statewide contractors.
- b. Offer exciting and unique revenue generating experiences to park guests at reasonable rates to ensure a sustainable revenue source.
- c. Ensure goods and services are procured as cost effectively as possible.

## Park Overview

### Site Fact Sheet

Park Name	Meeman-Shelby Forest
Site Manager	James Wilkinson
Area Manager	Zach Tinkle
Park acreage	12,539
Total number of visitors (FY 2022)	827,589
Total expenses before CO (FY 2022)	\$1,224,149
Total revenues (FY 2022)	\$473,192
Retail cost recovery % <sup>1</sup>	253%
Park cost recovery %	39%
Average expense per visitor (FY 2022)	\$0.68
Average revenue per visitor (FY 2022)	\$0.39
Gross profit or loss	(\$750,957)
Total full-time available positions / filled	19 / 15
Total part-time available positions / filled	3 / 3
Primary feeder markets	Day Use: Memphis, Arlington, Millington, Shelby County, Tipton County  Overnight: same as above plus Mississippi & Arkansas
Primary reasons people visit	<i>Activities available</i> : Boating, fishing, swimming, hiking, hunting, bird watching, picnicking, relaxing and park sponsored educational programs are among the activities available at Meeman-Shelby Forest.  <i>Facilities available:</i> Two boat launch ramps, 6 two bedroom rental units, a swimming pool for park guests, 49 campsites with water and electrical hook-ups, and a primitive group campsite. There are approximately 100 picnic tables, 6 picnic shelters, 3 playgrounds, one bath house, 18 miles of hiking trails, 8 miles of horse-riding trails and 5 miles of biking trails. There are two Frisbee golf courses, a nature center, group camp, and gift shop.
Opportunities for improvement	Open a camp store in our campground once renovations are complete.

<sup>1</sup> Based on T.C.A. 11-3-305, Cost recovery of revenue-generating facilities

## Key Attractions

The amenities or features listed below are those that seem to be most popular for visitors.

- The Park has 6 picnic shelters available which may be reserved or offered on a first come first served basis.
- There are approximately 100 picnic tables throughout the park. There are 49 campsites with water and electrical hook ups and a primitive group site.
- Six two-bedroom units make up the compliment of cabins.
- Boat Launch one is on the Mississippi River and boat launch two is on Poplar Tree Lake for fishing and boating. Jon boats and kayaks are available for rent seasonally.
- Pontoon and guided canoe floats are also available.
- The park has one of the largest Frisbee golf courses in the Southeast.
- We have 3 playgrounds. 1 is located at our campground, 2 is located at Shelter 2 and 3 is located at our Nature Center



## Site and Operations Assessment

This site and operations assessment is a culmination of analyses and findings from a review of the condition of facilities, infrastructure, and operations at Meeman-Shelby Forest State Park. The findings and observations are not intended to be an exhaustive review of all issues present, but provide a basic understanding of the predominant issues that contribute to the site's current operating conditions. The assessment includes the following:

1. Site and Facilities Assessment
2. Operational Assessment
3. Financial Assessment

## Site and Facility Assessment

### Methodology

Facility and asset conditions are rated using a differential scale of excellent, good, fair, or poor. Descriptions of conditions that are attributed to each of these findings are also provided.

Scale of Conditions	
Rating	General Description
Excellent	Facilities/amenities are in 'excellent' condition when they show little or no maintenance or repair problems. Facilities do not feature any major design or operational issues or flaws that contribute to diminished use or increased maintenance or upkeep. Facilities are easy to clean and maintain in order to place them back into public use and the users perceive them to be in excellent shape.
Good	Facilities/amenities are in 'good' condition when they show only minor maintenance or repair problems. Most maintenance issues with these facilities typically appear to be the result of age and/or heavy use. Facilities may only feature minor design or operational issues that contribute to diminished use or increased maintenance or upkeep. Facilities are moderately easy to clean and maintain in order to place them back into service and the users perceive them to be adequate for their use, but probably not in excellent shape.
Fair	Facilities/amenities are in 'fair' condition when they show significant maintenance or repair problems. Facilities generally exhibit ongoing maintenance issues that appear to be the result of age, heavy use, or design or operational flaws. Some maintenance and repair needs may compound their fair condition by being deferred because of budget and/or resource limitations. Facilities require more effort to clean and maintain before placing them back into service and the users may perceive them as being less than adequate for their use and in a state of deterioration. The facility or structure may need of major repair or replacement.
Poor	Facilities/amenities are in 'poor' condition when they show significant, on-going maintenance or repair problems that ultimately may result in suspended use for repair/replacement. Maintenance and repair issues are possibly the result of poor maintenance and clearly the result of age, heavy use, or design or operational flaws. Problems with the facilities are often compounded over time due to consistently deferred maintenance and repair because of budget and/or resource limitations. Facilities may feature major design or operational issues that contribute to diminished use or increased maintenance or upkeep. Facilities require excessive effort to clean and maintain before placing them back into service and the users often perceive them as being inadequate for their use and in a state of serious deterioration. The facility or structure may need of major repair or replacement.

### Facility Inventory and Assessment

The table below is an inventory of facilities and amenities at Meeman-Shelby Forest State Park, and provides the assessed condition of each as reviewed in May 2023.

Park Asset/Amenity	Quantity	Condition
Park Office/Visitor Center	1	Good
Bathroom on Museum Rd	1	Excellent
Nature Center	1	Good
Piersol Dining Hall	1	Excellent
Piersol Bunk house A	1	Good
Piersol Bunk house B	1	Good
Piersol Bunk house C	1	Good
Piersol Bunk house D	1	Good
Dogwood Ridge Pavilion	1	Fair
Dogwood Ridge Bath House	1	Poor
Woodland Trail Shelter	1	Fair
Disc Golf Pavilion	1	Good
Pavilion 1	1	Good
Pavilion 2	1	Good
Pavilion 3	1	Good
Pavilion 4	1	Good
Pavilion 5	1	Good
Pavilion 6	1	Good
Recreation Lodge	1	Good
Cabin 1	1	Good
Cabin 2	1	Good
Cabin 3	1	Good
Cabin 4	1	Good
Cabin 5	1	Good
Cabin 6	1	Good
New Treatment Plant	1	Excellent
Old Treatment Plant	1	Poor
Residence 345 Grassy lake Rd.	1	Poor
Residence 316 Grassy Lake Rd.	1	Good
Nature Center	1	Good
Boat House	1	Good
Horse Stables	1	Good
Horse Stables Office	1	Good
MRGC Dining Hall	1	Poor
Concession building U.A. Moore field	1	Good
Maintenance Shop	1	Excellent
Campground	52 sites	Fair / Poor



### Trail Inventory and Assessment

Trail Name	Total Miles	Condition
Bike Trail	2.53	Fair / Poor
Canoe Trail	1.16	Excellent
Chickasaw Bluff Trail	3.54	Good
Horse Trail	6.79	Good
Pioneer Springs Trail	2.57	Good
Poplar Tree Lake Water Trail	2.33	Excellent
Woodland Trail	3.37	Good
<b>Grand Total</b>	<b>22.29</b>	

### New Assets Needed

List new assets and amenities that would fall under capital expenditures that are needed to improve visitor experience and operational efficiency.

New Asset & Amenities	Description
Cabins	Increase the number of cabins from 6 to 12
Nature Center/ Visitor Center/ Office	Build a new Nature Center which will include the Visitor Center and Park Office
Outdoor Classroom	Build an outdoor classroom

### Prioritized Facility Needs

Based on the facility inventory and assessment, these prioritized needs have been identified.

Facility Need	Priority Assignment
Automatic doors at Visitor Center entrance	2
Automatic door at Nature Center	2

### Operational Assessment

The Operational Assessment includes:

1. An inventory and classification of programs and services being provided at the site,
2. A review of staffing at the site,
3. A review of concessionaires and partners operating at the site,
4. Visitation and customer satisfaction, and
5. Professional development and training.

## Inventory and Classification of Programs and Services

Programs and services are classified into one of three major categories:

- 1) Core or Essential Services;
- 2) Important Services; and
- 3) Value added or Visitor Supported Services.

Functions of the site are classified into these categories based in part on the mission and public mandates for both the site and the agency. For the programs and services in each of these categories, there are financial performance expectations that will define how services are funded and evaluated.

### **CATEGORY 1 – CORE SERVICES** *[Largely supported by public subsidies]*

Core programs, services and facilities are those the agency must provide and/or are essential in order to capably govern and meet statutory requirements. The failure of the agency to provide Category 1 services at adequate levels could result in significant negative consequences for the public and the resources under protection. The criteria for programs or services to be classified as core or essential are:

- The services are mandated by the agency's law or charter or are contractually obligated by agreement to provide the services.
- The services are essential to protecting and supporting the public's health and safety.
- The services protect and maintain valuable assets and infrastructure.
- The services would generally and reasonably be expected and supported by residents, businesses, customers and partners.
- The services are those that cannot or should not be provided by the private sector.
- The services provide a sound investment of public funds.

The following programs and services offered at Meeman-Shelby Forest State Park have been identified as **core services**:

- Law Enforcement
- Resource protection and education
- Maintenance
- Inventorying and documenting endangered and threatened species
- Using user friendly software to documenting information

### **CATEGORY 2 – IMPORTANT SERVICES** *[Supported by a balance of revenues and public subsidy]*

Important programs, services and facilities are those the agency should provide, and are important to governing and effectively serving residents, businesses, customers and partners. Providing Category 2 services expands or enhances the agency's ability to provide and sustain its core services. The criteria for programs or services to be classified as important are:

- The services expand, enhance or support identified core services.
- The services are broadly supported and utilized by the community, and are considered an appropriate, important, and valuable public good. Public support may be conditional upon the manner by which the services are paid for or funded.
- The services generate income or revenue that offsets some or all of the operating cost and/or are deemed to provide economic, social or environmental outcomes or results.

The following programs and services offered at Meeman-Shelby Forest State Park have been identified as **important services**:

- 20 miles of hiking trails
- 8-mile horse trail
- Pontoon Boat trips (school groups)
- Deep Swamp Canoe float
- Nature Center and our programming animals
- Interpretive programming

**CATEGORY 3 – VISITOR SUPPORTED SERVICES** *[Almost exclusively supported by earned revenue]*

Visitor supported programs, services and facilities are those discretionary services that the agency may provide when additional funding or revenue exists to offset the cost of providing those services. Category 3 services provide added value above and beyond what is required or expected. The criteria for programs or services to be classified as visitor supported are:

- The services expand, enhance or support Core Services, Important Services and the quality of life of the visitors, community or stakeholders.
- The services are supported, valued and well utilized and provide an appropriate and valuable public benefit.
- The services generate income or funding from sponsorships, grants, user fees or other sources that offset some or all of their cost and/or provides a meaningful return on investment.
- The Services can possibly be provided through outsourcing or use of concessionaires, providing opportunities for community enterprise or services that may not otherwise be provided by the agency.

The following programs and services offered at Meeman-Shelby Forest State Park have been identified as **visitor supported services**:

- 6 Rental Cabins
- Campground with 49 water and electric hookup sites and 3 primitive campsites
- Piersol Group Camp
- Pontoon Boat trips (public registration)
- 6 - Shelters
- Recreation Lodge
- Kayak and Jon boat rentals
- Fee based programs

## Personnel / Staffing Review

Personnel and staffing at Meeman-Shelby Forest State Park represent the largest area of budgetary expense at an average of 75% of the total operating budget each year for the last three complete years, which is above the target of labor costs not exceeding 65% of total operating expenditures. The tables below and on the following page provide a basic review of the current staffing at the site.

### Full Time Equivalent Employees

Position / Title	Quantity (FTE)	Compensation Total
Park Manager 2	1	*
Park Rangers	4	*
Admin Assistant 1	1	\$42,924
Account Clerk	1	\$33,900
Clerk 2	1	\$27,780
Facility Supervisor	1	\$60,300
Conservation Worker 2	4	\$138,732
Conservation Worker 1	2	\$61,008
Building Maintenance Worker 3	1	\$42,924
Custodial Worker Supervisor	1	\$34,236
Custodial Worker 2	2	\$27,504
<b>TOTAL</b>	<b>19</b>	<b>\$773,268</b>

\*Law enforcement compensation confidential by TN law.

### Part Time Employees

Position / Title	Quantity	Compensation Total
Clerk 1	2	\$24,614.40
Seasonal Interpretive Recreator	1	\$13,893.75
Conservation Worker 2	2	\$12,386
<b>TOTAL</b>	<b>5</b>	<b>\$50,894.15</b>

### Labor Support

Labor Support	Annual Hours
Volunteers	505
Community Service Workers	0
Engineering and Construction Crews	0
Resource Management Crews	0
Other: _____	0
<b>TOTAL</b>	<b>505</b>

### Total Labor Compensation Expense

Labor Type	Labor Expense
Full Time Equivalent Employees	\$773,268
Part Time Employees	\$50,894.15
<b>TOTAL Annual Labor Expense</b>	<b>\$824,162.15</b>

### Additional Future Positions Needed

Position / Title	Quantity	FTE or PT	Year Needed	Justification
None at this time				
<b>TOTAL</b>				

## Financial Performance

Revenue per available unit (**Rev Per Unit**) for the last four years in park facilities is detailed in the table below.

### Current Rev Per Unit

Fiscal Year	Cabin Rev Per Unit	Campground Rev Per Unit	Day Use Rev Per Unit	Piersol Group Camp Rev Per Unit
2019	58.86	5.8	5.48	47.59
2020	52.47	5.67	4.08	52.5
2021	86.65	9.49	4.96	53.25
2022	82.16	10.48	6.91	117.09

**Projected Rev Per Unit** - Based on current Rev Per Unit trends at the park and any known developments over the next four years.

Fiscal Year	Cabin Rev Per Unit	Campground Rev Per Unit	Day Use Rev Per Unit	Piersol Group Camp Rev Per Unit
2023	64.5	9.7	6.97	120
2024	84.1	6.5	7.3	122
2025	85.7	14.6	7.5	125
2026	86.2	15.2	7.7	127

**Customer Service**

Platform / Site	Year	Customer Satisfaction Level
Net Promoter Score	2023	30
Facebook	2022	4.4
Google	2022	4.6

**Professional Development and Training**

The following professional development and training opportunities are being explored and planned for the staff and volunteers at this park:

- Chainsaw safety class
- Tree cutting class
- CIT training for commissioned staff
- Domestic Violence training for commissioned staff
- Man tracking training. We currently have an annual tracking school held at our park.
- Radar training for commissioned staff
- Routine management training

**Summary of Key Recommendations**

Please provide short-term, mid-term, and long-term recommendations for addressing operational issues at the park and improving overall park performance.

**Short Term Recommendations (Less than 1 year)****1. Site and Facilities**

- a. Complete renovations of cabins
- b. Complete renovations on Piersol Group Camp
- c. Complete Aviary renovation
- d. Increase the size of our wildflower plantings at our apiaries.

**2. Operations and Staffing**

- a. Replace our current 3pt hitch mounted tractor blower replaced with a new unit.
- b. Replace our current buffalo mower mounted blower replaced with a new unit.

**3. Customer Service / Visitor Experience**

- a. Automatic door opener for current doors at Visitor Center and Nature Center
- b. Better signage throughout park

**Mid Term Recommendations (2-5 years)****1. Site and Facilities**

- a. Adding a small kitchen facility to the Recreation Lodge to accommodate meetings and weddings better while increasing its price to generate more revenues.
- b. Getting the residence located at 345 Grassy Lake Rd. demolished. It is currently on the list.



- c. Purchasing/building a structure to house our kayaks.
- d. Demolishing the round building next to our Nature Center.

## **2. Operations and Staffing**

- a. Planting Wildflowers in areas of the park to decrease mowing cost, increase beauty and wildlife.
- b. Planting food plots for wildlife
- c. Acquiring a single axle dump truck that has air to transport our mini excavator and be able to haul materials.

## **3. Customer Service / Visitor Experience**

- a. Our trails need a complete revamping. Revamping our mountain biking trail to offer more recreational opportunities for our visitors.
- b. We need to repave our current bike trail.
- c. Replace our current signage and add road names to stop signs
- d. Move the fishing pier from where it currently is to a location behind our current Nature Center.
- e. Purchasing a new pontoon boat to do tours on Poplar Tree Lake.
- f. Replacing our current telephone system to one that is up to date.

## **Long Term Recommendations (5+ years)**

### **1. Site and Facilities**

- a. Burying the power line on the South end of the Park, decreasing the amount of power outages and giving it a more appealing easier to maintain roadway.
- b. New lakeside cabins with decks and Wi-Fi.
- c. Building a New Nature Center/Visitor Center/ Park Office at the current location of our Nature Center.

### **2. Operations and Staffing**

- a. Moving the boat rental operation into our Nature Center and removing the old boat house.

### **3. Customer Service / Visitor Experience**

- a. Due to the extremely limited cellphone coverage, work with our department to see about getting a company to build a cellphone tower on our park.

## Resource Management Plan

A resource management plan is a specific statement of the objectives you have for your land and natural resources, as well as any significant cultural and historic resources stewarded by the state park. This includes a defined series of priorities and activities that will take place in order to meet those objectives. This can include future potential land acquisitions or divestitures that are necessary to meet the park's resource management goals and objectives.

Although Meeman-Shelby Forest State Park has numerous recreation opportunities and amenities for park visitors, the park is over 90% forested. Included in that is the Meeman Shelby Forest Natural Area which is one of the largest contiguous tracts of mature bottomland hardwood forest and upland forest associated with the Chickasaw Bluff left in Tennessee. Due to this preservation, the park provides a refuge for many populations of state listed rare species and champion trees which are the largest of their species in the state. It also provides excellent habitat for an abundance of wildlife. The park has made identifying and protecting these natural resources a priority and works to continuously improve these efforts. The ongoing preservation of these and other natural features is a fundamental part of resource management for the park.

Another area of focus are the historical resources associated with the New Deal Era establishment of the park. Many of the original Civilian Conservation Corps structures are in poor condition or no longer exist. The park has recently begun efforts to research and preserve the stories surrounding the development of the park. There have also been efforts to find ways to preserve at least some aspects of the original CCC structures so that they can continue to be utilized in telling the story of the park.

The contents of this resource management plan are as follows:

1. Resource Management Objectives
2. Resource Inventory and Assessment
3. Management Strategies
4. Priority Actions
5. Supplemental Information

## Resource Management Objectives

**Goal:** Tennessee State Parks will be nationally recognized for exemplary stewardship of natural and cultural resources.

**Objective - *More and better stewards:*** Increase internal and external stewards who share Tennessee State Parks core values and can contribute to the State Parks mission to steward Tennessee's natural and cultural resources.

**Objective - *Better resource management practices:*** Identify, manage, and restore unique natural and cultural resources for generations to come.

**Objective: *Better data and technology:*** Leverage data and technology to help inform and guide decisions on natural and cultural resources stewardship.

Aligned with these objectives are specific strategies to achieve the desired outcomes for the natural, cultural, and historic resources of this park.

### Strategies:

- A. To use social media to raise awareness of the unique natural resources our park contains.
- B. Raise awareness of how our visitors can assist us in the management of our natural resources. Through volunteer groups, TN Promise and other organizations.
- C. Continue to identify and inventory endangered and threatened species in our park.
- D. Collaborate with The Department of Natural areas to access threats to these species and provide guidance on how they need to be protected.
- E. Continue collaborating with Urban forestry and U.T. Knoxville Department of Forestry to continue documenting State and National Champion trees.
- F. Continue working with TWRA on the management and care of park properties being managed by TWRA.
- G. Using software that is compatible with the Department of natural areas databases, making sure they have the most up to date data points by updating historical data with more accurate information.
- H. Continued research into the early development of the park and best practices to preserve and share that story.

## Resource Inventory and Assessment

The significant natural, cultural and historic resources of the park requiring management are detailed below including a condition assessment rating for each. Condition assessments are selected from the following options based on what most describes the current condition of the resource:

1. **Excellent** – resource is in excellent condition; all potential threats to the integrity of the resource are currently managed and effectively mitigated.
2. **Good** – resource is generally in good condition and stable; threats to the integrity of the resource require regular management in order to mitigate.
3. **Fair** – resource is in stable condition but difficult to mitigate ongoing threats; additional management support is required.
4. **Poor** – resource is generally in poor condition with management support required to both improve existing conditions and address threats.
5. **Critical** – resource is highly threatened or deteriorated and requires immediate management prioritization.

Significant Park Resources	Quantity	Current Conditions	Notes
Poplar Tree Lake	125 acres	Excellent	Poplar tree lake is in excellent condition with minor erosion on small segments of lake shore that is well managed.
Piersol Lake	25 acres	Good	While the levee is in excellent shape, due to the soil addition being added to launch point has filled in the lake and needs to be excavated out by a floating track hoe.
Erosion throughout park	Multiple Areas	Fair/Poor	Due to our soils, we constantly battle erosion issues and need assistance in certain areas to help protect the resource.
Mature hardwood forest	Approx. 9,000 acres	Good	Generally, in good condition; need to work with Forestry to continue to improve forest health and management.
Riparian corridor	10.57 miles	Good/Fair	Most of the corridor is in good shape. The area at our boat ramp needs to be dredged and look at a way of solving the issue of sand buildup. This would have to be completed by the U.S. Army Corps of Engineers.

## Management Strategies

The management strategies outlined below are directly correlated to the resources identified previously in the *Resource Inventory and Assessment* section immediately above. These are general and overall management recommendations for each resource from which priority actions will be determined. Each resource has both a “Public Use” management strategy (which could include limited or no public access, or managed access with infrastructure and regulation) and a “General Management” strategy.

The priority assignments reflect the highest resource management priorities of the park over the next 1-5 years (High Priority) and 6-10 years (Moderate Priority)

Resource	Management Recommendations	Priority
Bottomland hardwood forest	<p><b>Public Use:</b> Managed access with infrastructure and regulation – access limited to trails.</p> <p><b>General Management:</b> The bottomland hardwood forests are managed for improvement of overall forest health which include ongoing invasive species management, erosion mitigation in areas of steep topography, and understory management through prescribed burns. Pursue collaboration with TN Division of Forestry to assist with overall forest management.</p>	High

Champion trees	<b>Public Use:</b> trail markers and map to identify. Some areas will be open following park hours. Some areas will have limited access due to hunting regulations and accessibility. <b>General Management:</b> Continue to work with Urban Forestry, U.T. K department of Forestry to continue finding more champion trees.	High
Poplar Tree Lake	<b>Public Use:</b> Open daily following Park operational hours. <b>General Management:</b> Continue to work with TWRA to monitor fish populations and work a plan to maintain their health.	Moderate
Piersol Lake	<b>Public Use:</b> Open daily following Park operational hours. <b>General Management:</b> Continue to work with TWRA to monitor fish populations and work a plan to maintain their health.	Moderate

## Land Management Strategies

In some cases, strategic land acquisitions or divestitures are necessary to meet the overall resource management goals and objectives of the park. This can include opportunities to address buffers, watersheds, viewsheds, inholdings, and adjacent properties. The table below details **general strategies** for land management. Timelines refer to Short Term (1-3 years), Mid Term (4-6 years), and Long Term (7-10 years).

Land Management Strategy	Timeline
None at this time	

## Supplemental Information

Invasive exotic plants identified in Meeman-Shelby SNA that are ranked as severe or significant threats by TNEPPC.

Species Name	Common Name	TN EPPC Threat Rank	Population Size in Natural Area	Primary Habitat
<i>Albizia julibrissin</i>	Mimosa	Severe Threat	Few scattered plants	Upland forest edge
<i>Celastrus orbiculatus</i>	Asian bittersweet	Severe Threat	Large patch where the Woodland Trail and the Woodland Shelter Trails meet	Second-growth forest
<i>Glechoma hederacea</i>	Ground-ivy	Significant Threat	Uncommon	Edges
<i>Ligustrum sinense</i>	Chinese privet	Severe Threat	Uncommon	Forest edges

<i>Lonicera japonica</i>	Japanese honeysuckle	Severe Threat	Abundant	Most areas
<i>Lysimachia nummularis</i>	Moneywort	Significant Threat	Unknown	Mudflats
<i>Microstegium vimineum</i>	Japanese stiltgrass	Severe Threat	Common to abundant	Riparian zones
<i>Paulownia tomentosa</i>	Princess Tree	Severe Threat	Scattered trees	Forest openings and edges
<i>Persicaria longiseta</i>	Bristly Lady's-thumb	Significant Threat	Scattered along trails	Typically along trails
<i>Polygonum caespitosum</i>	Oriental lady's-thumb	Significant Threat	Unknown	Disturbed areas
<i>Rosa multiflora</i>	Multifloral rose	Severe Threat	Rare	Forest edges

### State and Federally Listed Animals and Plants and Other Rare Species

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
<b>Vascular Plant</b>					
<i>Heteranthera multiflora</i>	Multiflowered Mud-Plantain	--	S	G4	S1
<i>Hottonia inflata</i>	American Featherfoil	--	S	G4	S2
<i>Hydrastis canadensis</i>	Goldenseal	--	S-CE	G4	S3
<i>Iris fulva</i>	Copper Iris	--	T	G5	S2
<i>Schisandra glabra</i>	Bay Starvine	--	T	G3	S2
<i>Ulmus crassifolia</i>	Cedar Elm	--	S	G5	S2
<b>Animal</b>					
<i>Accipiter striatus</i>	Sharp-shinned Hawk	--	D	G5	S3B,S4N
<i>Anhinga anhinga</i>	Anhinga	--	D	G5	S1B
<i>Ardea alba</i>	Great Egret	--	D	G5	S2B,S3N
<i>Dendroica cerulean</i>	Cerulean Warbler	--	D	G4	S3B
<i>Egretta caerulea</i>	Little Blue Heron	--	D	G5	S2B,S3N
<i>Egretta thula</i>	Snowy Egret	--	D	G5	S2B,S3N
<i>Haliaeetus leucocephalus</i>	Bald Eagle	--	D	G5	S3
<i>Ictinia mississippiensis</i>	Mississippi Kite	--	D	G5	S2S3
<i>Limnithlypis swainsonii</i>	Swainson's Warbler	--	D	G4	S3

<i>Ophisaurus attenuatus longicaudus</i>	Eastern Slender Glass Lizard	--	D	G5T5	S3
<i>Sterna antillarum athalassos</i>	Interior Least Tern	E	E	G4T2Q	S2S3B
<i>Webbhelix multilineata</i>	Striped Whitelip	--	--	G5	S2

## Description of the Area

- Meeman-Shelby Forest State Park is a 12,539-acre state park located in the Northwest portion of Shelby County. Meeman-Shelby is home to a State Natural Area approximately 8,000 acres. Memphis, the largest urban area in Tennessee, is located approximately seven miles south of the natural area. Approximately 90% of the park is forested. Outside the natural area the surrounding landscape is primarily forested with un-forested areas consisting primarily of homes and small businesses.
- Meeman-Shelby SNA is one of the largest contiguous tracts of mature bottomland and upland forest associated with the Chickasaw Bluff (the natural area contains Chickasaw Bluff 3) left in Tennessee. Bottomland forest falls within the Mississippi Alluvial Plain ecoregion. This ecoregion is characterized by extensive bottomland forests that are seasonally flooded and back swamps that frequently hold water at the surface throughout the year. The Chickasaw Bluff is within the Mississippi Valley Loess Plains ecoregion. A thick, highly erodible layer of loess is the distinguishing characteristic of this ecoregion. Loess is sediment formed by the accumulation of wind-blown silt. The ecoregion consists primarily of irregular plains, with oak-hickory and oak-hickory-pine natural vegetation. The natural area includes approximately 7,000 acres of Mississippi Alluvial Plain and approximately 4,000 acres of Chickasaw Bluff Number 3.
- The bottomlands undulate from bald cypress-dominated sloughs and bayous to bottomland hardwood within a few feet of topographic relief. Bottomland hardwoods are dominated by over cup, water, willow, cherry bark, and swamp white oaks, cottonwoods, sycamore, sweet gum, and southern hackberry.
- Chickasaw Bluff 3 ranges in elevation from 240-feet at its base to 350-feet in the natural area. Numerous small streams throughout the bluff have eroded the unconsolidated sediments to form a network of branching, narrow ravines into the bluff. Between the ravines are broad, flat-topped ridges. Dominant canopy trees throughout the area include sweet gum, tulip poplar, sugar maple, white oak, American beech, bitternut hickory, and northern red oak. Understory trees include hop hornbeam, flowering dogwood, pawpaw, red buckeye, and spicebush. Scouring rush horsetail and river cane thickets occur within ravines.
- Birds of Meeman-Shelby Forest State Park: The Audubon Society designated Meeman-Shelby as an important birding area in 2006. The 12,539-acre state park contains bottomland hardwoods, swamps, lakes and upland forest. There are over 20 miles of trails in the park which offer great opportunities for birding. Over 240 species of birds have been reported from the park. Substantial numbers of neo-tropical migrants can be found during the spring and fall migrations. Summer breeding birds include cerulean, Swainson's and Hooded warblers, Mississippi kites, anhinga, yellow-crowned night-herons and great egrets. In winter, visit Poplar Tree Lake for waterfowl and the Mississippi river boat ramp for gulls, ducks and geese flying over. Owls, woodpeckers, wild turkey, bald eagles, and other resident birds are common year-round.



- As of January 1, 2016, a total of 564 species (209 plants and 354 animals: of these 18 are either federal or state listed) have been recorded for the natural area. Fifteen new plants /animals were added to the inventory in 2015.

#### Description of Threats

- There are known breeding populations of exotic feral hog within the park. Hogs compete with native animals for resources, decrease forest regeneration by feeding on tree seedlings, increase erosion through wallowing, decrease native plant populations by rooting, decrease ground and low nesting bird populations by depredation, spread disease, and can spread invasive, exotic plants. A plan to eradicate feral hogs from the park is underway. The plan entails the trapping and killing of hogs with the help of TWRA staff. All state agency personnel have been issued the right to shoot and kill hogs on site when deemed safe. The DNA will monitor sensitive areas especially where rare plants are found for impacts by hogs. If necessary, actions to eliminate impacts will be initiated.
  - Currently twenty exotic plants occur at Meeman-Shelby SNA, eleven of which are ranked as either a “severe threat” or a “significant threat” by the Tennessee Exotic Pest Plant Council (TNEPPC; see table below). Japanese honeysuckle is common to abundant along sections of trail and is considered a threat to the state-listed bay starvine. Japanese stiltgrass and Chinese privet are both common to abundant in many locations of the natural area. Both these plants may have significant impacts on native plants. Management actions to control or where possible eradicate these plants will be enacted.
  - Erosion issues along the bluffs and other portions of the park are creating concerns for roadways and access to areas of the park.

### D. Cultural Resource Assessment

#### Description of the Area

- a. Mississippi River Group Camp which was built in the 1930’s by the CCC and WPA.
- b. Native American site – which is located on the South Eastern side of the levee on Poplar Tree Lake.

#### Description of Threats

- a. Erosion is a serious issue effecting facilities at our park.
- b. Vandalism of areas is not a constant issue but does take place.

### E. Target Elements

1. Mississippi River Group Camp is a CCC Group Camp built in the 1930’s by the Civilian Conservation Corps (CCC) and is dire need of repair to save these structures. We are in the process of repairing these facilities partnering with the Mississippi River Corridor and The University of Memphis.
2. Inventory is ongoing and has been bolstered by visiting biologists. Animal and plant inventories conducted by the West Tennessee Stewardship Ecologist and others are included in Appendices
  1. Communities



To determine ecological systems within Meeman-Shelby SNA, Lower Mississippi Valley Gap Landuse/Landcover data from the United States Geological Service (USGS), Biological Resources Division, National Wetlands Research Center were referenced. These data were compared with observations and data collected in the field by the Stewardship Ecologist from 2008 to 2012. The following list of systems is a combination of data from the USGS and the Stewardship Ecologist. Association data are not provided by the USGS. Data on associations are from the Stewardship Ecologist's field observations. Community names and descriptions are based on ecological systems and associations described by NatureServe unless otherwise stated. The CES or CEGl numbers provided are from the NatureServe databases.

1. Mississippi River Low Floodplain (Bottomland) Forest (CES203.195) – This forested system is seasonally flooded, with flooding more frequent than every five years, usually more frequently than every two years, generally by still water that may be impounded behind natural levees. Overcup oak is the characteristic dominant species.
2. East Gulf Coastal Plain Northern Loess Bluff (CES203.481) - This system is largely confined to steep bluffs bordering the northern portion of the eastern edge of the Mississippi River Alluvial Plain. These bluffs extend up to 150 m (500 feet) in elevation and from 30 to 60 m (100-200 feet) above the adjacent plain. The vegetation is often richer than surrounding non-loessal areas, or those with only thin loess deposits. The forests found on these bluffs are intermediate in soil moisture for the region and may best be thought of as mesic. In many cases, these bluffs provide habitat for plant species that are rare or absent from other parts of the Coastal Plain. One ecological association is known from the area.
  - a. Gulf Coastal Plain Loess Bluff Beech - Oak Forest (Northern Type); (CEGL004072) – Typically the most dominant canopy trees in this forest association are American beech, white, black and northern red oaks. Codominant species include pawpaw, hop hornbeam, southern sugar maple, and river cane. There is a rich species composition of mesic flora, including some species restricted, or nearly so, to this habitat in the region.
3. Open Water - Not described by NatureServe. Two major lakes exist on the property. These are Grassy Lake and Eagle Lake.

## INVENTORY OF PLANTS RECORDED AT MEEMAN-SHELBY FOREST STATE PARK AND NATURAL AREA

(Last updated on January 4, 2016)

A thorough inventory of the natural area flora has not been conducted but there is a wealth of information pertaining to the flora of the state park. Because of this, a state park inventory is presented below. Despite this lack of information, a column for the natural area titled "NA" has been added to the table. An "X" in this column represents that the plant does occur in the natural area. A more thorough inventory of the natural area is planned. Since the park and natural area do not share all the same plant communities, the natural area plant list will undoubtedly not contain all the plants found in the park list.

Family names, taxonomy, and binomial nomenclature are from, "A Fifth Checklist of Tennessee Vascular Plants"<sup>2</sup>. An inventory of the flora of Meeman-Shelby Forest State Park and SNA is considered a work in progress. Subsequent additions to the list will be added to updates of the management plan.

Scientific Name	Common Name	Notes	NA
<b>Aspleniaceae</b>			
<i>Asplenium platyneuron</i>	Ebony Spleenwort		X
<b>Dryopteridaceae</b>			
<i>Polystichum acrostichoides</i>	Christmas Fern		X
<b>Equisetaceae</b>			
<i>Equisetum hyemale</i> var. <i>affine</i>	Scouringrush Horsetail		X
<b>Onocleaceae</b>			
<i>Onoclea sensibilis</i>	Sensitive Fern		X
<b>Ophioglossaceae</b>			
<i>Botrypus virginianus</i>	Rattlesnake Fern		X
<i>Sceptridium</i> spp.	Grapefern		X
<b>Polypodiaceae</b>			
<i>Pleopeltis polypodioides</i> var. <i>michauxiana</i>	Resurrection Fern		X
<b>Pteridaceae</b>			
<i>Adiantum pedatum</i>	Northern Maidenhair Fern		X
<b>Thelypteridaceae</b>			
<i>Macrothelypteris torresiana</i>	Sword Fern	Exotic	X
<i>Phegopteris hexagonoptera</i>	Broad Beech Fern		X
<b>Woodsiaceae</b>			

<sup>2</sup> Chester, E.W., B.E. Wofford, D. Estes, and C. Bailey. 2009. A Fifth Checklist of Tennessee Vascular Plants. Brit Press.

<i>Athyrium filix-femina ssp. asplenioides</i>	Southern Lady Fern		X
<i>Cystopteris protrusa</i>	Lowland Bladder Fern		X
<i>Deparia acrostichoides</i>	Silvery Glade Fern		X
<i>Diplazium pycnocarpon</i>	Narrowleaf Glade Fern		X
<b>Cupressaceae</b>			
<i>Juniperus virginiana</i>	Eastern Red Cedar		X
<i>Taxodium distichum</i>	Bald Cypress		X
<b>Pinaceae</b>			
<i>Pinus taeda</i>	Loblolly Pine		
<b>Alliaceae</b>			
<i>Alliums spp.</i>	Onion species		X
<b>Araceae</b>			
<i>Arisaema dracontium</i>	Green Dragon		X
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit		X
<i>Lemna spp.</i>	Duckweed		X
<i>Spirodela polyrhiza</i>	Common Duckmeat		X
<b>Colchicaceae</b>			
<i>Uvularia grandiflora</i>	Large-flowered Bellwort		X
<b>Commelinaceae</b>			
<i>Tradescantia spp.</i>	Unknown spiderwort		
<b>Convallariaceae</b>			
<i>Polygonatum biflorum</i>	Smooth Solomon's-seal		
<b>Cyperaceae</b>			
<i>Carex blanda</i>	Eastern Woodland Sedge		X
<i>Carex frankii</i>	Frank's Sedge		X
<i>Carex louisianica</i>	Louisiana Sedge		X
<b>Dioscoreaceae</b>			
<i>Dioscorea villosa</i>	Wild Yam		X
<b>Iridaceae</b>			
<i>Iris cristata</i>	Crested Iris		X
<i>Iris fulva</i>	Copper Iris	State Threatened	X

<i>Sisyrinchium angustifolium</i>	Narrowleaf Blue-eyed Grass		X
<b>Juncaceae</b>			
<i>Juncus diffusissimus</i>	Slimpod Rush		X
<i>Juncus tenuis</i>	Path Rush		X
<b>Liliaceae</b>			
<i>Lilium spp.</i>	Lily		
<i>Liriope spp.</i>		Exotic	X
<b>Melanthiaceae</b>			
<i>Trillium recurvatum</i>	Recurved Trillium		X
<b>Orchidaceae</b>			
<i>Spiranthes vernalis</i>	Spring Ladies'-tresses		
<i>Tipularia discolor</i>	Crane-fly Orchid		X
<b>Poaceae</b>			
<i>Arundinaria gigantea</i>	Cane		X
<i>Brachyelytrum erectum</i>	Bearded Shorthusk		X
<i>Bromus commutatus</i>	Hairy Brome	Exotic	
<i>Chasmanthium latifolium</i>	Broadleaf Woodoats		X
<i>Leersia lenticularis</i>	Catchfly-Grass		X
<i>Microstegium vimineum</i>	Japanese Stiltgrass	Exotic	X
<i>Poa spp.</i>	Grass		
<b>Pontederiaceae</b>			
<i>Heteranthera multiflora</i>	Multifloral Mud-plantain	State Special Concern	X
<b>Ruscaceae</b>			
<i>Maianthemum racemosum</i>	False Solomon's Seal		X
<i>Polygonatum biflorum</i>	Solomon's Seal		X
<b>Smilacaceae</b>			
<i>Smilax bona-nox</i>	Greenbrier		X
<i>Smilax glauca</i>	Glaucus Greenbrier		X
<i>Smilax rotundifolia</i>	Common Greenbrier		X
<i>Smilax tamnoides</i>	Bristly Greenbrier		

<b>Typhaceae</b>			
<i>Typha latifolia</i>	Broadleaf Cattail		
<b>Acanthaceae</b>			
<i>Ruellia</i> spp.	Wild Petunia		X
<b>Adoxaceae</b>			
<i>Sambucus canadensis</i>	Common Elderberry		X
<i>Viburnum dentatum</i>	Arrow-wood		
<i>Viburnum rufidulum</i>	Rusty Black Haw		X
<b>Altingiaceae</b>			
<i>Liquidambar styraciflua</i>	Sweetgum		X
<b>Amaranthaceae</b>			
<i>Chenopodium album</i>	Lamb's-quarters	Exotic	X
<b>Anacardiaceae</b>			
<i>Rhus glabra</i>	Smooth Sumac		
<i>Toxicodendron radicans</i>	Poison Ivy		X
<b>Annonaceae</b>			
<i>Asimina triloba</i>	Pawpaw		X
<b>Apiaceae</b>			
<i>Chaerophyllum procumbens</i>	Spreading Chervil		X
<i>Chaerophyllum tainturieri</i>	Southern Chervil		X
<i>Cryptotaenia canadensis</i>	Honewort		X
<i>Daucus carota</i>	Wild Carrot	Exotic	
<i>Erigenia bulbosa</i>	Harbinger-of-Spring		X
<i>Osmorhiza longistylis</i>	Sweet Cicily		X
<i>Sanicula odorata</i>	Cluster Sanicle		X
<b>Apocynaceae</b>			
<i>Apocynum cannabinum</i>	Hemp Dogbane		
<i>Asclepias tuberosa</i>	Butterfly Weed		
<i>Gonolobus suberosus</i>	Anglepod		
<b>Aquifoliaceae</b>			
<i>Ilex opaca</i>	American Holly		X

<b>Araliaceae</b>			
<i>Aralia spinosa</i>	Devil's Walking Stick		
<b>Aristolochiaceae</b>			
<i>Asarum canadense</i>	Wild Ginger		X
<i>Endodeca serpentaria</i>	Virginia Snakeroot		X
<i>Hexastylis arifolia</i> var. <i>arifolia</i>	Little Brown Jug		X
<b>Asteraceae</b>			
<i>Achillea millefolium</i>	Common Yarrow		
<i>Acmella oppositifolia</i> var. <i>repens</i>	Opposite-leaf Spotflower		X
<i>Eclipta prostrata</i>	False Daisy		
<i>Ageratina altissima</i>	White Snakeroot		X
<i>Elaphantopus carolinianus</i>	Elephant's Foot		
<i>Elaphantopus tomentosus</i>	Elephant's Foot		X
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane		X
<i>Eupatorium serotinum</i>	Late Eupatorium		
<i>Krigia caespitosa</i>	Opposite-leaf Dwarf-dandelion		
<i>Lactuca</i> spp.	Unknown lettuce		
<i>Melanthera nivea</i>	Snow Squarestem		
<i>Packera glabella</i>	Yellowtop		X
<i>Pluchea camphorata</i>	Camphorweed		
<i>Ratibida pinnata</i>	Yellow Coneflower		
<i>Rudbeckia auriculata</i>	Eared Coneflower		
<i>Senecio vulgaris</i>	Common Groundsel	Exotic	X
<i>Silphium perfoliatum</i>	Cup-plant		
<i>Smallanthus uvedalius</i>	Yellow-flowered Leaf-cup		
<i>Solidago caesia</i>	Axillary Goldenrod		X
<i>Symphyotrichum lateriflorum</i>	Goblet Aster		X
<i>Taraxacum officinale</i>	Common Dandelion	Exotic	
<i>Xanthium strumarium</i>	Common Cocklebur	Exotic	
<b>Balsaminaceae</b>			
<i>Impatiens capensis</i>	Orange Touch-me-not		X

<b>Berberidaceae</b>			
<i>Podophyllum peltatum</i>	May-apple		X
<b>Betulaceae</b>			
<i>Carpinus caroliniana</i>	American Hornbeam		X
<i>Corylus americana</i>	American Hazlenut		
<i>Ostrya virginiana</i>	Hop-hornbeam		X
<b>Bignoniaceae</b>			
<i>Bignonia capreolata</i>	Crossvine		X
<i>Campsis radicans</i>	Trumpet Creeper		X
<b>Boraginaceae</b>			
<i>Cynoglossum virginianum</i>	Wild Comfrey		X
<i>Lithospermum tuberosum</i>	Southern Stoneseed		X
<i>Mertensia virginica</i>	Virginia Bluebells		X
<i>Myosotis verna</i>	Early Scorpion-Grass		X
<i>Nemophila aphylla</i>	Nemophila		X
<b>Brassicaceae</b>			
<i>Brassica rapa</i>	Field Mustard		X
<i>Cardamine hirsuta</i>	Hoary Bitter-Cress	Exotic	X
<i>Dentaria laciniata</i>	Five-parted Toothwort		X
<b>Campanulaceae</b>			
<i>Campanula americana</i>	American Bellflower		X
<i>Lobelia cardinalis</i>	Cardinal-Flower		X
<i>Lobelia inflata</i>	Indian Tobacco		X
<b>Cannabaceae</b>			
<i>Celtis laevigata</i>	Sugarberry		X
<i>Celtis occidentalis</i>	Northern Hackberry		X
<b>Caprifoliaceae</b>			
<i>Lonicera japonica</i>	Japanese Honeysuckle	Exotic	X
<i>Symphoricarpos orbiculatus</i>	Coralberry		X
<b>Caryophyllaceae</b>			
<i>Silene stellata</i>	Starry Campion		X

<i>Stellaria media</i>	Common Chickweed	Exotic	X
<b>Celastraceae</b>			
<i>Celastrus orbiculatus</i>	Asian Bittersweet	Exotic	X
<i>Euonymus americanus</i>	Strawberry-bush		X
<i>Euonymus hederaceus</i>	Winter Creeper	Exotic	X
<b>Cornaceae</b>			
<i>Cornus drummondii</i>	Rough-Leaf Dogwood		X
<i>Cornus florida</i>	Flowering Dogwood		X
<i>Cornus foemina</i>	Swamp Dogwood		
<b>Ebenaceae</b>			
<i>Diospyros virginiana</i>	Persimmon		X
<b>Elaeagnaceae</b>			
<i>Elaeagnus umbellata</i>	Autumn Olive	Exotic	
<b>Ericaceae</b>			
<i>Monotropa uniflora</i>	Indian Pipes		X
<i>Oxydendron arboreum</i>	Sourwood		X
<b>Euphorbiaceae</b>			
<i>Acalypha virginica</i>	Virginia Copperleaf		X
<b>Fabaceae</b>			
<i>Albizia julibrissin</i>	Mimosa	Exotic	X
<i>Amorpha fruticosa</i>	Tall False Indigo		X
<i>Amphicarpaea bracteata</i>	American Hogpeanut		X
<i>Cercis canadensis</i>	Redbud		X
<i>Cladrastis kentukea</i>	Yellowwood		X
<i>Desmodium glutinosum</i>	Pointedleaf Tick-Trefoil		X
<i>Gleditsia triacanthos</i>	Honey Locust		X
<i>Gymnocladus dioicus</i>	Kentucky Coffeetree		X
<i>Kummerowia striata</i>	Japanese Clover	Exotic	
<i>Lespedeza cuneata</i>	Chinese Lespedeza	Exotic	
<i>Medicago lupulina</i>	Black Medick	Exotic	X
<i>Robinia pseudoacacia</i>	Black Locust		



<i>Trifolium dubium</i>	Little Hop-clover	Exotic	
<i>Trifolium pratense</i>	Red Clover	Exotic	
<i>Trifolium repens</i>	White Clover	Exotic	
<i>Vicia sativa</i>	Common Vetch	Exotic	X
<i>Vicia villosa</i> ssp. <i>Villosa</i>	Hairy Vetch	Exotic	
<b>Fagaceae</b>			
<i>Fagus grandifolia</i>	American Beech		X
<i>Quercus alba</i>	White Oak		X
<i>Quercus coccinea</i>	Scarlet Oak		X
<i>Quercus lyrata</i>	Overcup Oak		X
<i>Quercus macrocarpa</i>	Bur Oak		
<i>Quercus michauxii</i>	Swamp Chestnut Oak		X
<i>Quercus muhlenbergii</i>	Chinquapin Oak		X
<i>Quercus nigra</i>	Water Oak		X
<i>Quercus pagoda</i>	Cherrybark Oak		X
<i>Quercus phellos</i>	Willow Oak		X
<i>Quercus rubra</i>	Northern Red Oak		X
<i>Quercus velutina</i>	Black Oak		X
<b>Geraniaceae</b>			
<i>Geranium carolinianum</i>	Carolina Crane's-bill		
<i>Geranium maculatum</i>	Wild Geranium		
<b>Hydrangeaceae</b>			
<i>Hydrangea arborescens</i>	Wild Hydrangea		X
<i>Philadelphus</i> spp.	Mock Orange		X
<b>Hypericaceae</b>			
<i>Hypericum</i> spp.	St. Johnswort		X
<i>Triadenum walteri</i>	Greater Marsh St. Johnswort		X
<b>Illiciaceae</b>			
<i>Schisandra glabra</i>	Bay Starvine	State Threatened	X
<b>Juglancaceae</b>			
<i>Carya cordiformis</i>	Bitternut Hickory		X

<i>Carya glabra</i>	Pignut Hickory		
<i>Carya illinoensis</i>	Pecan		X
<i>Carya ovata</i>	Shagbark Hickory		
<i>Carya tomentosa</i>	Mockernut Hickory		X
<i>Juglans nigra</i>	Black Walnut		X
<b>Lamiaceae</b>			
<i>Blephilia hirsuta</i>	Hairy Wood Mint		X
<i>Callicarpa americana</i>	French Mulberry		X
<i>Collinsonia canadensis</i>	Northern Horse-balm		X
<i>Glechoma hederacea</i>	Ground Ivy	Exotic	X
<i>Lamium purpureum</i>	Purple Dead-nettle	Exotic	X
<i>Monarda fistulosa</i>	Wild Bergamot		
<i>Perilla frutescens</i>	Perilla Mint	Exotic	X
<i>Salvia lyrata</i>	Lyre-leaf Sage		
<i>Scutellaria lateriflora</i>	Mad-dog Skullcap		
<i>Stachys tenuifolia</i> var. <i>tenuifolia</i>	Smooth Hedge-Nettle		X
<b>Lauraceae</b>			
<i>Lindera benzoin</i>	Spicebush		X
<i>Sassafras albidum</i>	Sassafras		X
<b>Linderniaceae</b>			
<i>Lindernia dubia</i>	False Pimpernel		X
<b>Magnoliaceae</b>			
<i>Liriodendron tulipifera</i>	Tuliptree		X
<i>Magnolia acuminata</i>	Cucumber Magnolia		X
<i>Magnolia grandiflora</i>	Southern Magnolia		
<b>Malvaceae</b>			
<i>Tilia americana</i>	American Basswood		X
<b>Menispermaceae</b>			
<i>Calycocarpum lyonii</i>	Lyon's Cupseed		X
<i>Cocculus carolinus</i>	Snail-seed		X
<i>Menispermum canadense</i>	Moonseed		X

<b>Montiaceae</b>			
<i>Claytonia virginica</i>	Spring Beauty		X
<b>Moraceae</b>			
<i>Morus alba</i>	White Mulberry	Exotic	
<i>Morus rubra</i>	Red Mulberry		X
<b>Myrsinaceae</b>			
<i>Lysimachia nummularia</i>	Creeping Jenny	Exotic	
<i>Lysimachia radicans</i>	Trailing Yellow Loosestrife		X
<b>Nyssaceae</b>			
<i>Nyssa sylvatica</i>	Black Gum		X
<b>Oleaceae</b>			
<i>Fraxinus americana</i>	White Ash		X
<i>Fraxinus pennsylvanica</i>	Green Ash		X
<i>Fraxinus profunda</i>	Pumpkin Ash		X
<i>Ligustrum sinense</i>	Chinese Privet	Exotic	X
<b>Onagraceae</b>			
<i>Circaea lutetiana</i> ssp. <i>canadensis</i>	Broadleaf Enchanter's Nightshade		X
<i>Oenothera laciniata</i>	Cutleaf Evening-Primrose		
<b>Orobanchaceae</b>			
<i>Epifagus virginiana</i>	Beech Drops		X
<b>Oxalidaceae</b>			
<i>Oxalis stricta</i>	Common Yellow Wood-sorrel		X
<i>Oxalis violacea</i>	Violet Wood-sorrel		X
<b>Papaveraceae</b>			
<i>Corydalis flavula</i>	Yellow Fumewort		X
<b>Passifloraceae</b>			
<i>Passiflora incarnata</i>	Maypop		
<i>Passiflora lutea</i>	Yellow Passion-flower		X
<b>Paulowniaceae</b>			
<i>Paulownia tomentosa</i>	Princess Tree	Exotic	X

<b>Phrymaceae</b>			
<i>Mazus pumilus</i>	Japanese Mazus	Exotic	
<i>Phryma leptostachya</i>	American Lopseed		X
<b>Phytolaccaceae</b>			
<i>Phytolacca americana</i>	Pokeweed		X
<b>Plantaginaceae</b>			
<i>Penstemon digitalis</i>	Talus Slope Beard-tongue		
<i>Veronica spp.</i>	Speedwell		
<b>Platanaceae</b>			
<i>Platanus occidentalis</i>	Sycamore		X
<b>Polemoniaceae</b>			
<i>Phlox divaricata</i>	Forest Phlox		X
<b>Polygonaceae</b>			
<i>Persicaria longiseta</i>	Bristly Lady's-thumb	Exotic	X
<i>Persicaria virginiana</i>	Jumpseed		X
<i>Rumex conglomeratus</i>	Clustered Dock		
<i>Rumex crispus</i>	Curly Dock	Exotic	
<b>Portulacaceae</b>			
<i>Portulaca oleracea</i>	Common Purslane	Exotic	
<b>Primulaceae</b>			
<i>Hottonia inflata</i>	Featherfoil	State Special Concern	X
<b>Ranunculaceae</b>			
<i>Actaea pachypoda</i>	White Baneberry		X
<i>Clematis virginiana</i>	Virgin's-bower		
<i>Hydrastis canadensis</i>	Goldenseal	State Special Concern	X
<i>Ranunculus abortivus</i>	Early-Spring Buttercup		X
<i>Ranunculus recurvatus</i>	Recurved Buttercup		X
<b>Rhamnaceae</b>			
<i>Berchemia scandens</i>	Supple-jack		X

Rosaceae			
<i>Agrimonia pubescens</i>	Soft Agrimonia		X
<i>Duchesnea indica</i>	Indian Strawberry	Exotic	X
<i>Fragaria virginiana</i>	Wild Strawberry		
<i>Geum canadense</i>	White Avens		X
<i>Prunus serotina</i>	Black Cherry		X
<i>Rosa multiflora</i>	Multifloral Rose	Exotic	X
<i>Rubus argutus</i>	Southern Blackberry		
Rubiaceae			
<i>Cephalanthus occidentalis</i>	Buttonbush		
<i>Galium aparine</i>	Cleavers		X
<i>Galium circaezans</i>	Forest Bedstraw		
<i>Mitchella repens</i>	Partridge Berry		X
<i>Sherardia arvensis</i>	Field Madder	Exotic	
Salicaceae			
<i>Populus deltoides</i>	Cottonwood		X
<i>Salix eriocephala</i>	Diamond Willow		X
<i>Salix nigra</i>	Black Willow		X
Santalaceae			
<i>Phoradendron leucarpum</i>	Mistletoe		
Sapindaceae			
<i>Acer drummondii</i>	Drummond Red Maple		
<i>Acer negundo</i>	Box-elder		X
<i>Acer rubrum</i>	Red Maple		X
<i>Acer saccharum</i> ssp. <i>floridanum</i>	Southern Sugar Maple		X
<i>Aesculus pavia</i>	Red Buckeye		X
Sapotaceae			
<i>Sideroxylon lycioides</i>	Buckthorn		X
Saururaceae			
<i>Saururus cernuus</i>	Lizard's Tail		X
Scrophulariaceae			

<i>Scrophularia marilandica</i>	Carpenter's Square		X
<b>Staphyleaceae</b>			
<i>Staphylea trifolia</i>	Bladdernut		X
<b>Styracaceae</b>			
<i>Styrax americanus</i>	American Snowbell		
<b>Theophrastaceae</b>			
<i>Samolus valerandi</i>	Brookweed		
<b>Ulmaceae</b>			
<i>Ulmus alata</i>	Winged Elm		X
<i>Ulmus americana</i>	American Elm		X
<i>Ulmus crassifolia</i>	Cedar Elm	State Special Concern	X
<i>Ulmus rubra</i>	Slippery Elm		X
<b>Urticaceae</b>			
<i>Boehmeria cylindrica</i>	False Nettle		X
<i>Laportea canadensis</i>	Wood Nettle		X
<i>Pilea pumila</i>	Clearweed		X
<i>Urtica chamaedryoides</i>	Heartleaf Nettle		X
<b>Valerianaceae</b>			
<i>Valerianella radiata</i>	Beaked Corn-salad		
<b>Verbenaceae</b>			
<i>Verbena urticifolia</i>	White Vervain		X
<b>Violaceae</b>			
<i>Viola pubescens</i>	Downy Yellow Violet		X
<i>Viola sororia</i>	Common Blue Violet		X
<b>Vitaceae</b>			
<i>Ampelopsis arborea</i>	Pepper-vine		X
<i>Ampelopsis cordata</i>	Cordate-leaved Peppervine		
<i>Parthenocissus quinquefolia</i>	Virginia Creeper		X
<i>Vitis cinerea</i>	Grape		
<i>Vitis riparia</i>	Riverside Grape		

<i>Vitis rotundifolia</i>	Muscadine		
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Data collected by Allan J. Trently, West Tennessee Stewardship Ecologist and

Neiswender, John, Memphis State student M.S. student of Ted Browne. 1984. Overstory Layer of Loess Bluffs Table-

## Animals Recorded at Meeman-Shelby Forest State Park

(Last Updated on January 4, 2016)

A thorough inventory of the natural area fauna has not been conducted but there is a wealth of information pertaining to the fauna of the state park. Because of this, a state park inventory is presented below. The natural area contains primarily bottomland hardwoods and swamp, but does also contain a portion of upland communities. A good portion of the fauna found within the park will also be found within the natural area. When a more thorough inventory of the natural area is completed, a column indicating fauna found in the natural area will be added to the table below.

Scientific Name	Common Name	Notes
<b>Amphibians<sup>1</sup></b>		
<i>Acris crepitans</i>	Eastern Cricket Frog	
<i>Anaxyrus fowleri</i>	Fowler's Toad	
<i>Gastrophryne carolinensis</i>	Eastern Narrow-mouthed Toad	
<i>Hyla chrysoscelis</i>	Cope's Gray Treefrog	
<i>Hyla cinerea</i>	Green Treefrog	
<i>Lithobates catesbiana</i>	Bullfrog	
<i>Lithobates clamitans clamitans</i>	Green Frog	
<i>Lithobates sphenoccephalata</i>	Southern Leopard Frog	
<i>Pseudacris feriarum</i>	Upland Chorus Frog	
<i>Scaphiopus holbrookii</i>	Eastern Spadefoot	
<i>Ambystoma maculatum</i>	Spotted Salamander	
<i>Ambystoma opacum</i>	Marbled Salamander	
<i>Ambystoma talpoideum</i>	Mole Salamander	
<i>Ambystoma texanum</i>	Small-mouthed Salamander	
<i>Eurycea guttolineata</i>	Three-lined Salamander	
<i>Plethodon mississippi</i>	Mississippi Slimy Salamander	

<i>Siren intermedia</i>	Lesser Siren	
<b>Birds<sup>2</sup></b>		
<i>Gavia immer</i>	Common Loon	
<i>Podilymbus podiceps</i>	Pied-billed Grebe	
<i>Pelecanus erythrorhynchos</i>	American White Pelican	
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	
<i>Anhinga anhinga</i>	Anhinga	Nesting Bird: State Deemed in Need of Management
<i>Botaurus lentiginosus</i>	American Bittern	
<i>Ardea herodias</i>	Great Blue Heron	
<i>Ardea alba</i>	Great Egret	Possible Nesting Bird: State Deemed in Need of Management
<i>Egretta thula</i>	Snowy Egret	Possible Nesting Bird: State Deemed in Need of Management
<i>Egretta caerulea</i>	Little Blue Heron	Possible Nesting Bird: State Deemed in Need of Management
<i>Bubulcus ibis</i>	Cattle Egret	
<i>Butorides virescens</i>	Green Heron	
<i>Nycticorax nycticorax</i>	Black-crowned Night-Heron	
<i>Nyctanassa violacea</i>	Yellow-crowned Night-Heron	
<i>Ajaia ajaja</i>	Roseate Spoonbill	
<i>Mycteria americana</i>	Wood Stork	
<i>Cygnus columbianus</i>	Tundra Swan	
<i>Branta Canadensis</i>	Canada Goose	
<i>Anser albifrons</i>	Greater White-fronted Goose	
<i>Chen caerulescens</i>	Snow Goose	
<i>Aix sponsa</i>	Wood Duck	
<i>Anas platyrhynchos</i>	Mallard	
<i>Anas rubripes</i>	Black Duck	
<i>Anas strepera</i>	Gadwall	





<i>Anas acuta</i>	Northern Pintail	
<i>Anas americana</i>	American Wigeon	
<i>Anas clypeata</i>	Northern Shoveler	
<i>Anas discors</i>	Blue-winged Teal	
<i>Anas crecca</i>	Green-winged Teal	
<i>Aythya valisineria</i>	Canvasback	
<i>Aythya americana</i>	Redhead	
<i>Aythya collaris</i>	Ring-necked Duck	
<i>Aythya affinis</i>	Lesser Scaup	
<i>Melanitta fusca</i>	White-winged Scoter	
<i>Bucephala clangula</i>	Common Goldeneye	
<i>Bucephala albeola</i>	Bufflehead	
<i>Lophodytes cucullatus</i>	Hooded Merganser	
<i>Mergus serrator</i>	Red-breasted Merganser	
<i>Oxyura jamaicensis</i>	Ruddy Duck	
<i>Cathartes aura</i>	Turkey Vulture	
<i>Coragyps atratus</i>	Black Vulture	
<i>Circus cyaneus</i>	Northern Harrier	
<i>Ictinia mississippiensis</i>	Mississippi Kite	Possible Nesting Bird: State Deemed in Need of Management
<i>Accipiter striatus</i>	Sharp-shinned Hawk	Possible Nesting Bird: State Deemed in Need of Management
<i>Accipiter cooperii</i>	Cooper's Hawk	
<i>Buteo lineatus</i>	Red-shouldered Hawk	
<i>Buteo platyterus</i>	Broad-winged Hawk	
<i>Buteo jamaicensis</i>	Red-tailed Hawk	
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Nesting Bird: State Deemed in Need of Management
<i>Pandion haliaetus</i>	Osprey	
<i>Falco sparverius</i>	American Kestrel	

<i>Falco columbarius</i>	Merlin	
<i>Falco peregrinus</i>	Peregrine Falcon	Improbably Nesting Bird: State Endangered
<i>Colinus virginianus</i>	Northern Bobwhite	
<i>Meleagris gallopavo</i>	Wild Turkey	
<i>Fulica americana</i>	American Coot	
<i>Grus canadensis</i>	Sandhill Crane	
<i>Charadrius vociferus</i>	Killdeer	
<i>Tringa melanoleuca</i>	Greater Yellowlegs	
<i>Tringa flavipes</i>	Lesser Yellowlegs	
<i>Tringa solitaria</i>	Solitary Sandpiper	
<i>Actitis macularia</i>	Spotted Sandpiper	
<i>Calidris alpina</i>	Dunlin	
<i>Calidris melanotos</i>	Pectoral Sandpiper	
<i>Calidris minutilla</i>	Least Sandpiper	
<i>Scolopax minor</i>	American Woodcock	
<i>Gallinago delicata</i>	Wilson Snipe	
<i>Larus Philadelphia</i>	Bonaparte's Gull	
<i>Larus pipixcan</i>	Franklin's Gull	
<i>Larus atricilla</i>	Laughing Gull	
<i>Larus delawarensis</i>	Ring-billed Gull	
<i>Larus argentatus</i>	Herring Gull	
<i>Sterna caspia</i>	Caspian Tern	
<i>Sterna hirundo</i>	Common Tern	
<i>Sterna forsteri</i>	Forster's Tern	
<i>Sterna antillarum athalassos</i>	Interior Least Tern	Possible Nesting Bird: Federally Endangered
<i>Chlidonias niger</i>	Black Tern	
<i>Zenaida macroura</i>	Mourning Dove	
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	
<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	



<i>Tyto alba</i>	Barn Owl	Improbable Nesting Bird: State Deemed in Need of Management
<i>Bubo virginianus</i>	Great Horned Owl	
<i>Strix varia</i>	Barred Owl	
<i>Otus asio</i>	Eastern Screech-Owl	
<i>Caprimulgus carolinensis</i>	Chuck-wil's-widow	
<i>Caprimulgus vociferus</i>	Whip-poor-will	
<i>Chaetura pelagic</i>	Chimney Swift	
<i>Archilochus colubris</i>	Ruby-throated Hummingbird	
<i>Ceryle alcyon</i>	Belted Kingfisher	
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	
<i>Picoides pubescens</i>	Downy Woodpecker	
<i>Picoides villosus</i>	Hairy Woodpecker	
<i>Colaptes auratus</i>	Northern Flicker	
<i>Dryocopus pileatus</i>	Pileated Woodpecker	
<i>Contopus cooperi</i>	Olive-sided Flycatcher	
<i>Contopus virens</i>	Eastern Wood-pewee	
<i>Empidonax virescens</i>	Acadian Flycatcher	
<i>Sayornis phoebe</i>	Eastern Phoebe	
<i>Myiarchus crinitus</i>	Great Crested Flycatcher	
<i>Tyrannus tyrannus</i>	Eastern Kingbird	
<i>Lanius ludovicianus</i>	Loggerhead Shrike	Improbable Nesting Bird: State Deemed in Need of Management
<i>Vireo olivaceus</i>	Red-eyed Vireo	
<i>Vireo gilvus</i>	Warbling Vireo	
<i>Vireo philadelphicus</i>	Philadelphia Vireo	
<i>Vireo bellii</i>	Bell's Vireo	
<i>Vireo griseus</i>	White-eyed Vireo	

<i>Vireo flavifrons</i>	Yellow-throated Vireo	
<i>Vireo solitarius</i>	Blue-headed Vireo	
<i>Cyanocitta cristata</i>	Blue Jay	
<i>Corvus brachyrhynchos</i>	American Crow	
<i>Corvus ossifragus</i>	Fish Crow	
<i>Progne subis</i>	Purple Martin	
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	
<i>Tachycineta bicolor</i>	Tree Swallow	
<i>Hirundo rustica</i>	Barn Swallow	
<i>Poecile carolinensis</i>	Carolina Chickadee	
<i>Baeolophus bicolor</i>	Tufted Titmouse	
<i>Sitta Canadensis</i>	Red-breasted Nuthatch	
<i>Sitta carolinensis</i>	White-breasted Nuthatch	
<i>Certhia americana</i>	Brown Creeper	
<i>Thryothorus ludovicianus</i>	Carolina Wren	
<i>Troglodytes troglodytes</i>	Winter Wren	
<i>Regulus satrapa</i>	Golden-crowned Kinglet	
<i>Regulus calendula</i>	Ruby-crowned Kinglet	
<i>Poliophtila caerulea</i>	Blue-gray Gnatcatcher	
<i>Sialia sialis</i>	Eastern Bluebird	
<i>Turdus migratorius</i>	American Robin	
<i>Hylocichla mustelina</i>	Wood Thrush	
<i>Catharus fuscescens</i>	Veery	
<i>Catharus ustulatus</i>	Swainson's Thrush	
<i>Catharus minimus</i>	Gray-cheeked Thrush	
<i>Catharus guttatus</i>	Hermit Thrush	
<i>Dumetella carolinensis</i>	Gray Catbird	
<i>Mimus polyglottos</i>	Northern Mockingbird	
<i>Toxostoma rufum</i>	Brown Thrasher	
<i>Sturnus vulgaris</i>	European Starling	Exotic



<i>Bombycilla cedrorum</i>	Cedar Waxwing	
<i>Parula americana</i>	Northern Parula	
<i>Vermivora celata</i>	Orange-crowned Warbler	
<i>Vermivora peregrina</i>	Tennessee Warbler	
<i>Vermivora pinus</i>	Blue-winged Warbler	
<i>Vermivora chrysoptera</i>	Golden-winged Warbler	Non-nesting: State Deemed in Need of Management
<i>V. pinus x chrysoptera</i>	"Brewster's" Warbler	
<i>Vermivora ruficapilla</i>	Nashville Warbler	
<i>Dendroica petechia</i>	Yellow Warbler	
<i>Dendroica pensylvanica</i>	Chestnut-sided Warbler	
<i>Dendroica magnolia</i>	Magnolia Warbler	
<i>Dendroica tigrina</i>	Cape May Warbler	
<i>Dendroica caerulescens</i>	Black-throated Blue Warbler	
<i>Dendroica cerulea</i>	Cerulean Warbler	Nesting Bird: State Deemed in Need of Management
<i>Dendroica fusca</i>	Blackburnian Warbler	
<i>Dendroica coronata</i>	Yellow-rumped Warbler	
<i>Dendroica virens</i>	Black-throated Green Warbler	
<i>Dendroica discolor</i>	Prairie Warbler	
<i>Dendroica palmarum</i>	Palm Warbler	
<i>Dendroica pinus</i>	Pine Warbler	
<i>Dendroica castanea</i>	Bay-breasted Warbler	
<i>Dendroica striata</i>	Blackpoll Warbler	
<i>Dendroica dominica</i>	Yellow-throated Warbler	
<i>Helmitheros vermivora</i>	Worm-eating Warbler	
<i>Protonotaria citrea</i>	Prothonotary Warbler	
<i>Mniotilta varia</i>	Black-and-white Warbler	
<i>Setophaga ruticilla</i>	American Redstart	
<i>Limnithlypis swainsonii</i>	Swainson's Warbler	Possible Nesting Bird: State Deemed in Need of Management

<i>Seiurus aurocapillus</i>	Ovenbird	
<i>Seiurus noveboracensis</i>	Northern Waterthrush	
<i>Seiurus motacilla</i>	Louisiana Waterthrush	
<i>Oporornis formosus</i>	Kentucky Warbler	
<i>Oporornis philadelphia</i>	Mourning Warbler	
<i>Geothlypis trichas</i>	Common Yellowthroat	
<i>Wilsonia pusilla</i>	Wilson's Warbler	
<i>Wilsonia canadensis</i>	Canada Warbler	
<i>Wilsonia citrina</i>	Hooded Warbler	
<i>Icteria virens</i>	Yellow-breasted Chat	
<i>Piranga rubra</i>	Summer Tanager	
<i>Piranga olivacea</i>	Scarlet Tanager	
<i>Cardinalis cardinalis</i>	Northern Cardinal	
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	
<i>Guiraca caerulea</i>	Blue Grosbeak	
<i>Passerina cyanea</i>	Indigo Bunting	
<i>Spiza americana</i>	Dickcissel	
<i>Pipilo maculatus</i>	Spotted towhee	
<i>Pipilo erythrophthalmus</i>	Eastern Towhee	
<i>Spizella arborea</i>	American Tree Sparrow	
<i>Spizella pusilla</i>	Field Sparrow	
<i>Spizella passerina</i>	Chipping Sparrow	
<i>Passerculus sandwichensis</i>	Savannah Sparrow	
<i>Pooecetes gramineus</i>	Vesper Sparrow	
<i>Chondestes grammacus</i>	Lark Sparrow	Improbable Nesting Bird: State Threatened
<i>Zonotrichia albicollis</i>	White-throated Sparrow	
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	
<i>Passerella iliaca</i>	Fox Sparrow	
<i>Melospiza melodia</i>	Song Sparrow	
<i>Melospiza lincolni</i>	Lincoln's Sparrow	



<i>Melospiza georgiana</i>	Swamp Sparrow	
<i>Junco hyemalis</i>	Dark-eyed Junco	
<i>Calcarius lapponicus</i>	Lapland Longspur	
<i>Sturnella magna</i>	Eastern Meadowlark	
<i>Dolichonyx oryzivorus</i>	Bobolink	
<i>Molothrus ater</i>	Brown-headed Cowbird	
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	
<i>Euphagus carolinus</i>	Rusty Blackbird	
<i>Quiscalus quiscula</i>	Common Grackle	
<i>Icterus galbula</i>	Baltimore Oriole	
<i>Icterus spurius</i>	Orchard Oriole	
<i>Coccothraustes vespertinus</i>	Evening Grosbeak	
<i>Carpodacus purpureus</i>	Purple Finch	
<i>Carpodacus mexicanus</i>	House Finch	Exotic
<i>Carduelis pinus</i>	Pine Siskin	
<i>Carduelis tristis</i>	Amercan Goldfinch	
<i>Passer domesticus</i>	House Sparrow	
<b>Butterflies</b>		
<i>Papilio glaucus</i>	Eastern Tiger Swallowtail	
<i>Eurytides marcellus</i>	Zebra Swallowtail	
<i>Battus philenor</i>	Pipevine Swallowtail	
<i>Papilio Troilus</i>	Spicebush Swallowtail	
<i>Pontia protodice</i>	Checkered White	
<i>Colias philodice</i>	Clouded Sulphur	
<i>Colias eurytheme</i>	Orange Sulphur	
<i>Colias cesonia</i>	Southern Dogface	
<i>Eurema nicippe</i>	Sleepy Orange	
<i>Nathalis iole</i>	Dainty Sulphur	
<i>Pyrisitia lisa</i>	Little Yellow	
<i>Phoebis sennae</i>	Cloudless Sulphur	
<i>Feniseca tarquinius</i>	Harvester	

<i>Strymon melinus</i>	Gray Hairstreak	
<i>Calycopis cecrops</i>	Red-banded Hairstreak	
<i>Callophrys henrici</i>	Henry's Elfin	
<i>Cupido comyntas</i>	Eastern Tailed-Blue	
<i>Celastrina spp.</i>	Azure species	
<i>Agraulis vanillae</i>	Gulf Fritillary	
<i>Euptoieta claudia</i>	Variegated Fritillary	
<i>Speyeria cybele</i>	Great Spangled Fritillary	
<i>Phyciodes tharos</i>	Pearl Crescent	
<i>Phyciodes phaon</i>	Phaon Crescent	
<i>Chlosyne nycteis</i>	Silvery Checkerspot	
<i>Polygonia interrogationis</i>	Question Mark	
<i>Polygonia comma</i>	Eastern Comma	
<i>Nymphalis antiopa</i>	Mourning Cloak	
<i>Vanessa atalanta</i>	Red Admiral	
<i>Vanessa virginiensis</i>	American Lady	
<i>Vanessa cardui</i>	Painted Lady	
<i>Junonia coenia</i>	Common Buckeye	
<i>Limenitis arthemis</i>	Red-spotted Purple	
<i>Limenitis archippus</i>	Viceroy	
<i>Anaea andria</i>	Goatweed Leafwing	
<i>Asterocampa celtis</i>	Hackberry Emperor	
<i>Asterocampa clyton</i>	Tawny Emperor	
<i>Libytheana carinenta</i>	American Snout	
<i>Danaus plexippus</i>	Monarch	
<i>Megisto cymela</i>	Little Wood-Satyr	
<i>Hermeuptychia sosybius</i>	Carolina Satyr	
<i>Cyllopsis gemma</i>	Gemmed Satyr	
<i>Enodia anthedon</i>	Northern Pearly-eye	
<i>Epargyreus clarus</i>	Silver-spotted Skipper	
<i>Erynnis juvenalis</i>	Juvenal's Duskywing	





<i>Erynnis horatius</i>	Horace's Duskywing	
<i>Erynnis funeralis</i>	Funereal Duskywing	
<i>Erynnis baptisiae</i>	Wild Indigo Duskywing	
<i>Pyrgus communis</i>	Common Checkered-Skipper	
<i>Pholisora catullus</i>	Common Sootywing	
<i>Hylephila phyleus</i>	Fiery Skipper	
<i>Atalopedes campestris</i>	Sachem	
<i>Ancyloxypha numitor</i>	Least Skipper	
<i>Lerema accius</i>	Clouded Skipper	
<i>Polites themistocles</i>	Tawny-edged Skipper	
<i>Wallengrenia egeremet</i>	Northern Broken-Dash	
<i>Pompeius verna</i>	Little Glassywing	
<i>Euphyes vestris</i>	Dun Skipper	
<i>Poanes zabulon</i>	Zabulon Skipper	
<i>Poanes yehl</i>	Yehl Skipper	
<i>Amblyscirtes hegon</i>	Pepper and Salt Skipper	
<i>Amblyscirtes Aesculapius</i>	Lace-winged Roadside-Skipper	
<b>Mammals</b>		
<i>Didelphis virginiana</i>	Virginia Opossum	
<i>Dasypus novemcinctus</i>	Nine-Banded Armadillo	
<i>Sciurus carolinensis</i>	Eastern Gray Squirrel	
<i>Procyon lotor</i>	Raccoon	
<i>Sus scrofa</i>	Wild Boar	Exotic
<i>Odocoileus virginianus</i>	White-tailed Deer	
<b>Moths</b>		
<i>Actias luna</i>	Luna Moth	
<i>Amphion floridensis</i>	Nessus Sphinx	
<i>Antheraea polyphemus</i>	Polyphemus Moth	
<i>Euchaetes egle</i>	Milkweed Tussock Moth	
<i>Eumorpha pandorus</i>	Pandorus Sphinx	
<i>Hypantria cunea</i>	Fall Webworm	

<i>Mellila xanthometata</i>	Orange Winge	
<i>Nadata gibbosa</i>	White-dotted Prominent	
<i>Saucrobotys futilalis</i>	Dogbane Saucrobotys	
<i>Xanthotype spp.</i>		
<b>Odonates</b>		
<i>Anax junius</i>	Common Green Darner	
<i>Arigomphus submedianus</i>	Jade Clubtail	
<i>Argia apicalis</i>	Blue-fronted Dancer	
<i>Calopteryx maculata</i>	Ebony Jewelwing	
<i>Celithemis eponina</i>	Halloween Pennant	
<i>Didymops transversa</i>	Stream Cruiser	
<i>Enallagma civile</i>	Familiar Bluet	
<i>Enallagma signatum</i>	Orange Bluet	
<i>Epithea princeps</i>	Prince Baskettail	
<i>Erythemis simplicicollis</i>	Eastern Pondhawk	
<i>Ischnura hastata</i>	Citrine Forktail	
<i>Ischnura ramburii</i>	Rambur's Forktail	
<i>Libellula incesta</i>	Slaty Skimmer	
<i>Libellula luctuosa</i>	Widow Skimmer	
<i>Libellula vibrans</i>	Great Blue Skimmer	
<i>Pachydiplax longipennis</i>	Blue Dasher	
<i>Pantala flavescens</i>	Wandering Glider	
<i>Pantala hymenaea</i>	Spot-winged Glider	
<i>Perithemis tenera</i>	Eastern Amberwing	
<i>Plathemis lydia</i>	Common Whitetail	
<i>Sympetrum ambiguum</i>	Blue-Faced Meadowhawk	
<i>Tachopteryx thoreyi</i>	Gray Petaltail	
<i>Tramea lacerate</i>	Black Saddlebags	
<b>Reptiles<sup>1</sup></b>		
<i>Ophisaurus attenuatus longicaudus</i>	Eastern Slender Glass Lizard	State Deemed in Need of Management



<i>Plestiodon fasciatus</i>	Common Five-lined Skink	
<i>Plestiodon laticeps</i>	Broad-headed Skink	
<i>Sceloporus undulates</i>	Eastern Fence Lizard	
<i>Scincella lateralis</i>	Little Brown Skink	
<i>Agkistrodon contortrix</i>	Copperhead	
<i>Agkistrodon piscivorus leucostoma</i>	Western Cottonmouth	
<i>Carphophis amoenus</i>	Common Wormsnake	
<i>Coluber constrictor</i>	North American Racer	
<i>Crotalus horridus</i>	Timber Rattlesnake	
<i>Diadophis punctatus</i>	Ring-necked Snake	
<i>Heterodon platirhinos</i>	Eastern Hog-nosed Snake	
<i>Lampropeltis nigra</i>	Eastern Black Kingsnake	
<i>Lampropeltis Triangulum</i>	Milksnake	
<i>Nerodia erythrogaster flavigaster</i>	Yellow-bellied Watersnake	
<i>Nerodia rhombifer</i>	Diamond-backed Watersnake	
<i>Nerodia sipedon</i>	Common Watersnake	
<i>Opheodrys aestivus</i>	Rough Greensnake	
<i>Pantherophis spiloides</i>	Gray Ratsnake	
<i>Storeia dekayi</i>	Dekay's Brownsnake	
<i>Storeia occipitomaculata</i>	Red-bellied Snake	
<i>Thamnophis sirtalis</i>	Common Gartersnake	
<i>Chelydra serpentine</i>	Snapping Turtle	
<i>Pseudemys concinna concinna</i>	Easter River Cooter	
<i>Terrapene carolina carolina</i>	Woodland Box Turtle	
<i>Terrapene carolina triunguis</i>	Three-toed Box Turtle	
<i>Trachemys scripta elegans</i>	Red-eared Slider	

<sup>1</sup> Bird records from the Memphis Chapter of the Tennessee Ornithological Society checklists

<sup>2</sup> Amphibian and reptiles records from: Hassell, M.D. 1960. A Herpetofaunal Survey of Shelby Forest State Park. Masters Thesis. Memphis State University

## APPENDIX V: WORKS CITED

Hassell, M.D. 1960. A Herpetofaunal Survey of Shelby Forest State Park. Masters Thesis, Memphis State University.

Hill, S. R. 2007. Conservation Assessment for the American Featherfoil (*Hottonia inflata* Ell.). INHS Technical Report 2007. This report can also be found at [http://www.ideals.illinois.edu/bitstream/handle/2142/18119/INHS2007\\_34.pdf?sequence=1](http://www.ideals.illinois.edu/bitstream/handle/2142/18119/INHS2007_34.pdf?sequence=1).

Meeman-Shelby Forest State Park Natural Areas Resource Plan. By All Allan J. Trently

West Tennessee Stewardship Ecologist, Natural Areas Program, Division of Natural Areas Updated January 4, 2016.

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## Interpretive Programming and Education Plan

The Interpretation, Programming, and Education planning is currently going through a planning process to further build out the process. This section only represents the very basic framework. As TSP moves forward with the future of Interpretive programming and education this section will likely be changed to accommodate those modifications.

Attached to this plan are the Interpretive Program Templates in fillable PDF forms.

Meeman-Shelby is here to preserve this area and its resources so that the public and future generations all can experience what there is to offer here; A natural sanctuary from day-to-day life; a healthy outdoor experience; an opportunity to learn and study and see firsthand evidence of the area's history and natural wonders.

To provide first class outdoor experience to all visitors that use Meeman-Shelby's nearly 13,000 acres as a classroom and showcase. To use the park to emphasize programming with topics such as historical, cultural, and natural resources. To use the relationship between the flora and fauna of the largest tract of wilderness in the Shelby County area as an educational tool.

## Interpretation, Programming and Education Goals

**Goal:** Tennessee State Parks will be the most accessible, welcoming, and inviting system of parks that enriches Tennesseans and visitors through excellent interpretation, education, and resource-based recreation.

**Objective:** *accessible, welcoming, and inviting to all:* create quality and varied programs of interpretation, recreation, and outreach so that all audiences feel welcome and invited.

**Objective:** *high quality programming:* develop and support mission-based and resource-relevant programs to engage visitors, empower staff, and develop community wellbeing.

**Objective:** *resource-based outdoor recreation:* provide resource-based outdoor recreation opportunities that ensure representation of Tennessee's natural, scenic, and cultural resources.

Within these objectives are the following desired outcomes:

- Building stewards
- Ensuring Equity
- Provide the Highest Value
- Develop Resource Based Programming
- Support Staff

## Strategic Programs and Services

The strategies detailed below with corresponding action plans are aligned with the Comprehensive Strategic Plan of Tennessee State Parks.

**Strategy – Telling Full Stories:** to identify and replicate best practices while establishing new methods for representing diverse, equitable, inclusive, and just dialogues.

Action Plan:

1. By utilizing the interpreting library, we have made all our interpretive outlines available to interpretive staff statewide.

**Strategy** – Interpretative Media: Connecting people to the resources of Tennessee State Parks with technology in ways that complement and expand interpretation within and beyond the park, giving everyone access to becoming a park steward.

Action Plan:

1. Through providing recreational activities such as canoe tours, guided hikes we are able to highlight the unique natural resources in our park.

**Strategy** – Develop and maintain a portfolio of programs across multiple types of experiences:

- A. Interpretation of natural, historic, and cultural resources
- B. 3-5 unique experiences for all audiences
- C. Varying intensity from self-guided to immersive experiences
- D. Partnership opportunities for program delivery
- E. Varying costs to the user from “free to fee” based on value of the benefit to the participant.

Action Plan:

1. To increase knowledge of and interest in our park and what it offers to the public and how important it is to the area.
2. To increase an interest in preserving our natural resources.
3. To educate the public about current environmental issues on the park and in the region.
4. To educate the public on how to react as well as interact with wildlife.
5. We currently partner with other state and local parks, City of Millington, NSA Mid-South military base, Millington Chamber of Commerce, Memphis Astronomical Society, multiple businesses and organizations, and multiple schools and school systems.
6. We have started charging for programs and fieldtrips to Meeman-Shelby Forest State Parks.

**Strategy** – Develop and maintain diverse and varied resourced-based outdoor recreation opportunities across multiple types of experiences:

- A. Managing recreational use with the stewardship needs of the resource
- B. Varying intensity from self-guided to guided experiences
- C. Partnership opportunities for program delivery
- D. Varying costs to the user from “free to fee” based on value of the benefit to the participant and impact to the resource.

Action Plan:

1. Look at using charging structure for our programs.



#### HELPFUL DEFINITIONS:

- Nonpersonal Interpretation: Interpretive media that do not require a person to deliver a message (i.e. exhibits, waysides, brochures, signs, magazines, books, etc.).
- Personal Interpretation: One person or persons providing interpretation to another person or persons.
- Interpretive Program: Activities, presentations, publications, audio-visual media, signs, and exhibits that convey key heritage resource messages to audiences. (Adapted from US Fish & Wildlife Service)
- Interpretation: a purposeful approach to communication that facilitates meaningful, relevant, and inclusive experiences that deepen understanding, broaden perspectives, and inspire engagement with the world around us.

## Financial Performance Goals

Financial performance goals are a critical performance management tool of the Tennessee State Park System. While the financial performance of parks are managed more intently at the system level, individual parks are expected to recover a portion of their operating costs through the generation of earned revenues where appropriate and to contribute to the system goals. The majority of earned revenues at state parks are generated through facility usage (campsites, cabins, lodge rooms, rentable pavilions, etc.), the delivery of fee-based programs and services, equipment rental and usage, and retail sales. Other forms of revenue generation come from golf courses and restaurants where those amenities are present. That said, not all parks have the same ability to generate earned revenues because the availability of facilities or programs vary widely from one park to the next. The “recovery” of operational costs by earned revenues is referred to as “cost recovery”. Operating costs beyond those supported by earned revenues represents the extent to which state funding support operations at each park.

The table below represents the overall park cost recovery for this specific park for the most recent fiscal year and forecast estimates for the upcoming five years. These estimates are based on projection estimates for known and foreseeable costs and recovery figures.

FINANICAL PERFORMANCE GOALS						
	Current Cost Recovery (2022)	Target Cost Recovery: FY 2023	Target Cost Recovery: FY 2024	Target Cost Recovery: FY: 2025	Target Cost Recovery: FY 2026	Target Cost Recovery: FY 2027
Park Overall	39%	29%	21%	28%	35%	37%



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